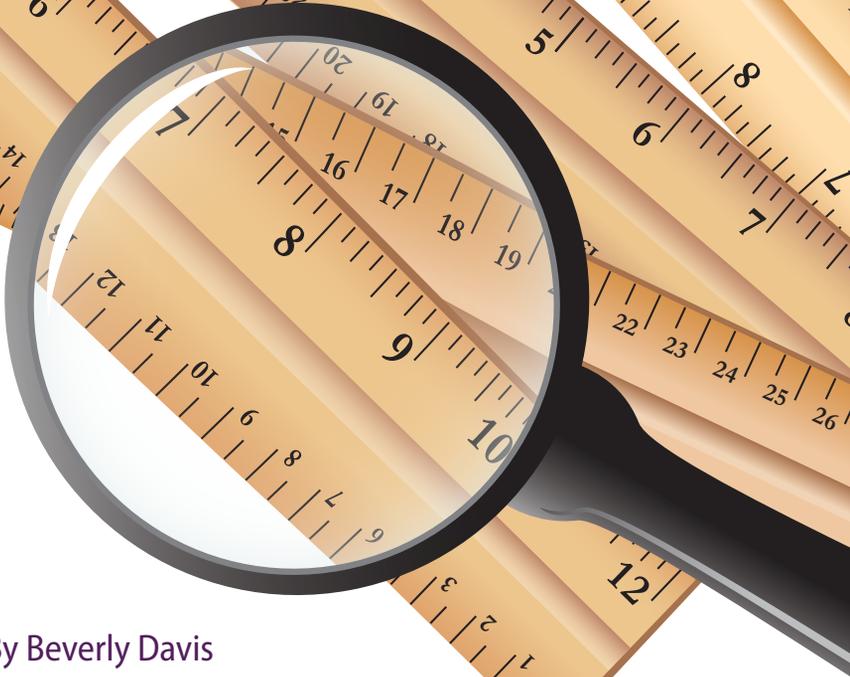


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**RESOURCE**  
RECYCLING



# A NEW TYPE OF MEASURING STICK

By Beverly Davis

The policy of diverting from landfill brought great dividends when able to pluck the low-hanging fruit of the 1990s, but some say it is no longer the cutting edge. Iowa's voluntary program, the environmental management system (EMS), highlights another option to manage solid waste planning areas and permitted landfills. How will EMS impact the recycling industry in the Hawkeye State and is it a good solution for the rest of the country?

In 2008, the Iowa Legislature unanimously passed House File 2570, the country's first EMS (environmental management system) law, which is a voluntary management program for solid waste facilities using computer software designed to track and measure environmental program results and compliance.

It also provides an alternative to operating under the state's standardized waste diversion performance regulations and penalties. Because involved solid waste managers and Iowa's lead state regulators have determined EMS is a more holistic approach to environmental measurement, compliance and environmental protection, planners hope the EMS program will eventually replace the current regulatory landscape.

Initial concerns that the law would diminish or dismantle recycling – which is one of the system's six areas of focus ranging from water quality improvement to greenhouse gas reduction – have proved unfounded, according to the Hawkeye State's environmental agency and others. And environmental projects have received a fresh infusion of cash, creativity and community enthusiasm as a result of the state's landmark EMS legislation.

"Iowa's EMS program offers solid waste agencies and permitted facilities free training, computer software, on-site consultants and grant funding to forward continuous improvements and create

greater operational efficiencies, while doing the right thing for the environment," says Brian Tormey, Bureau Land Chief for Iowa's Department of Natural Resources (DNR).

## Building blocks for new steps

Program operators say that EMS encourages responsible environmental management while prompting good land stewardship and continuous improvement. Those working with the system say that it levels the playing field for smaller landfills, which, under the program, compete against themselves based on their continuous improvements in the six areas of emphasis included in Iowa's EMS in Table 1.

## EMS and sustainable recycling

After four years of operating under EMS – and unplugging from the standardized waste diversion system – participating solid waste agencies say they have increased recycling along with other eco-minded programs by following the new model.

Using EMS management practices, landfill managers demonstrate compliance while identifying and engaging in activities like recycling that reduce environmental impacts and increase operation-

al efficiencies through continuous and measurable improvement in the six bulleted areas in Table 1.

Tom Hadden manages Metro Waste Authority, the state's largest solid waste facility. He has experienced firsthand the benefits of the new system as one of the six original EMS-designated agencies and is a stalwart supporter of the approach now being offered to all Iowa communities by the DNR.

"The best way to explain EMS is by actually showing how we added programs to the Metro Hazardous Waste Drop-Off (MHWD) facility with the ultimate goal of creating a zero-waste operation," says Hadden.

According to Hadden, several years ago their MHWD was still receiving large amounts of material they couldn't recycle or reuse, resulting in more waste being incinerated. As part of their EMS management system, the Metro Waste Authority team began making small, but continuous – and measurable – improvements and inclusions at the MHWD. These activities included:

- Public education on the 3-Rs (reduce, reuse and recycle)
- Swap shop (reuse)
- Drop-off events
- Battery recycling drop-offs
- Recycling drop-off for tires and metal
- Paper shredding service

## Table 1 | The six EMS plan components

- **Yard debris management**
- **Household hazardous waste collection**
- **Water quality improvement**
- **Greenhouse gas reduction**
- **Recycling services**
- **Environmental education.**

- Shredded hazardous waste plastic containers

Over three years of EMS, what resulted was a 78 percent increased use of the MHWD facility. Hadden notes that, because of the software that measures the EMS program, all the projects are measured by quantifiable results.

## Measuring EMS

EMS is all about the metrics for recycling and other environmental programs. It provides invaluable information on what needs improving and clues to better the process the next time around.

"EMS reinforces a lot of the recycling and the rest of our environmental programs as part of our mission to divert from the landfill," says Marie DeVries, Planner and Contract Administrator for the Cedar Rapids/Linn County Solid Waste Agency.

"However, with EMS you can't just look at the total tonnage diverted from the landfill. EMS makes us sit down and look carefully at everything we were doing and then, gives us the hard numbers and information to decide what makes more sense environmentally, as well as cost and operational efficiency."

As an example, DeVries identified the EMS process she experienced when considering whether trucking loads of low-impact material transported to the recycling center by also factoring in greenhouse gas emissions required to move the product.

"Unlike the waste diversion standards alone, EMS takes into account the entire waste stream cycle and all its environmental impacts based on the metrics, so we now recycle more sustainably and make the most efficient use our limited resources while we provide more protection for the environment," says DeVries.

## Smarter recycling and securing end products

A recent EMS recycling program, for carpet, was piloted in July 2012 by the Cedar Rapids/Linn County EMS team. The program, which was recently renewed by the EMS program, is bringing in three tons per week and is picked up by the processor at the County's facility.

"I've been in this business for seventeen years and I've seen end-markets vanish as quickly as they appear on the radar

## Table 2 | Materials accepted for electronic recycling by Scott County's Electronic Demanufacturing Facility

Calculators	Printer cartridges (all types)
Cameras	Printers (ribbon, laser, ink jet)
Cassette recorders	Radios
CD players	Scanners
Cellphones	Stereo receivers
Computers	Tape recorders
Copiers	Televisions
DVD players	Typewriters (electric)
Keyboards (typing and musical)	VCRs
Monitors	Video game equipment

screen,” says Devries. “Before we made the decision to continue carpet recycling – which has been a boon to our residents and a revenue generator for our organization – EMS requires that you have the facts to assure your recycled material has an end product, assessing each recycling program within the entire waste stream, costs and benefits included.”

Other new and successful recycling and waste recovery programs kick-started by EMS-designated agencies includes:

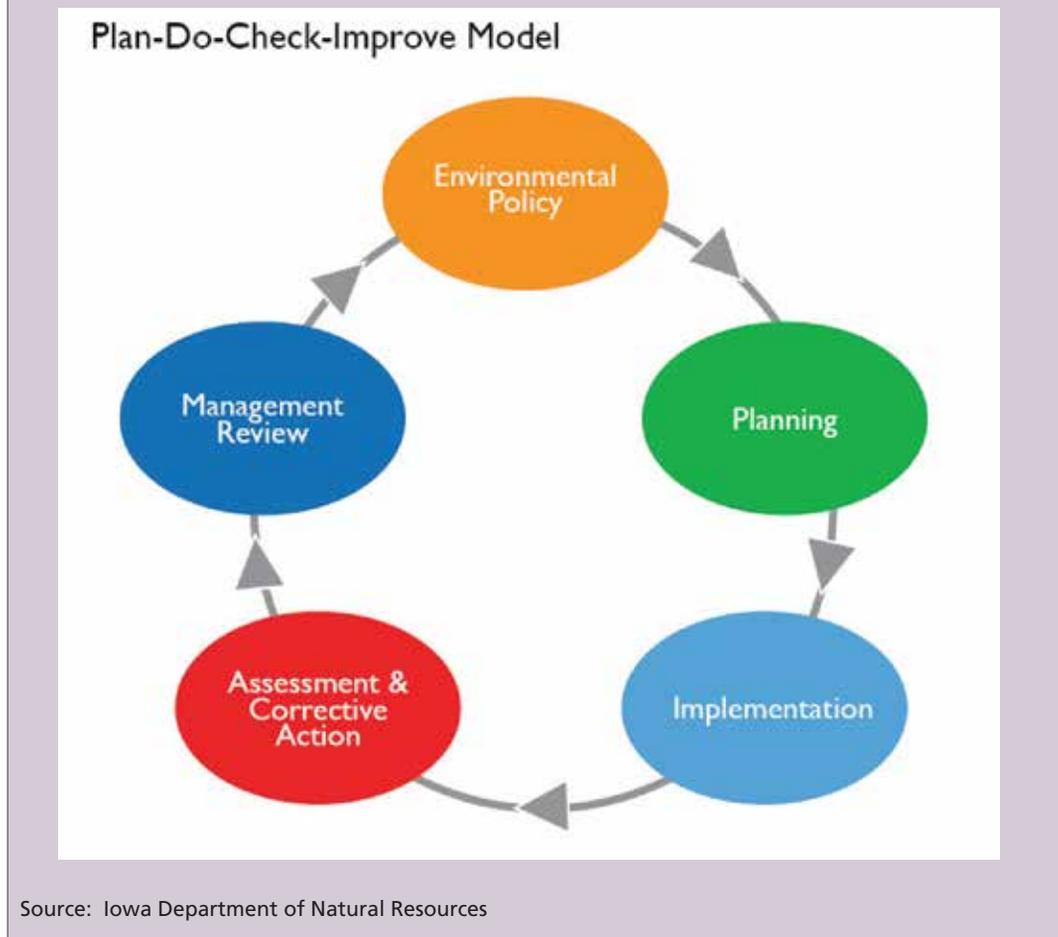
- Clay County’s wood chipper loan-out program that reduced open burning and improved air quality by reusing the product in municipal beautification projects.
- Rathbun Area Solid Waste Agency’s new EMS school recycling program resulting in 12-14 tons recycled for the school year 2010-2011.
- New shingle recycling programs at Metro Waste Authority resulting in 3,700 tons of shingles diverted from the landfill, increased revenues and reduced environmental footprint.
- New recycling program in Davenport’s inner-city core has been approved that will place new, “19<sup>th</sup> century-inspired” drop-off recycling bins for new city dwellers.
- Scott County’s Electronic Demanufacturing Facility that has increased business recycling by 360 percent in six months and the first in the world publicly-managed facility to receive the R2 (Responsible Recycling) Certification (See Table 2 for a list of accepted items).

## A model for success

Iowa’s new platform follows the ISO 14000 guidelines of an EMS cycle. According to Hadden, the system isn’t about smacking the ball out of the park, “it’s about hitting singles every day by making small continuous improvements that over the long haul add up to big efficiencies.” Those efficiencies also have to be consistent with best environmental practices (See Figure 1).

All system participants have documented multiple benefits including improved

Figure 1 | EMS Model



cost effectiveness and operational efficiencies, as well as greater positive environmental impacts through proactive and measurable recycling, greenhouse gas reduction and other programs. Each year, EMS agencies go through an annual review with DNR staff to assure compliance as well as meeting their goals based on their local community needs and challenges.

Program planners feel the benefits of starting an EMS program extend beyond environmental compliance and include operational efficiencies, reduced environmental risks and state assistance in developing and maintaining the system with software, consultants, and even grant funding.

Some involved feel the whole dynamic between industry and regulators has been reversed. DNR works and supports EMS agencies with outside EMS consultants providing the boots on the ground to get the new EMS program up-and-running.

“The relationship is totally changed, and for the better, and all the state support is critical for success,” says Wendy Wittrock, Cass County Environmental Control Director.

More than two hundred Iowa communities are now operating under EMS with three new EMS recruits signing on this year. DNR’s Brian Tormey expects a quarter of the 44 solid waste planning areas to make the switch to EMS in another few years because, “we now have the proof that EMS is a more holistic and sustainable system.” According to Tormey, “we’re pushing for EMS to replace the old waste diversion system, but it’s a long-term deal. We’re in it for the long term because solid waste agencies and their interaction with the environment extend way beyond just putting trash in a landfill.” RR

For more information on Iowa’s EMS, contact Leslie Goldsmith at (515) 281-8499 or [leslie.goldsmith@dnr.iowa.gov](mailto:leslie.goldsmith@dnr.iowa.gov) or visit the program’s website at <http://tinyurl.com/IowaEMS>. The author, Beverly Davis, can be contacted at [davisbeverly42@gmail.com](mailto:davisbeverly42@gmail.com).

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